FIG. 1

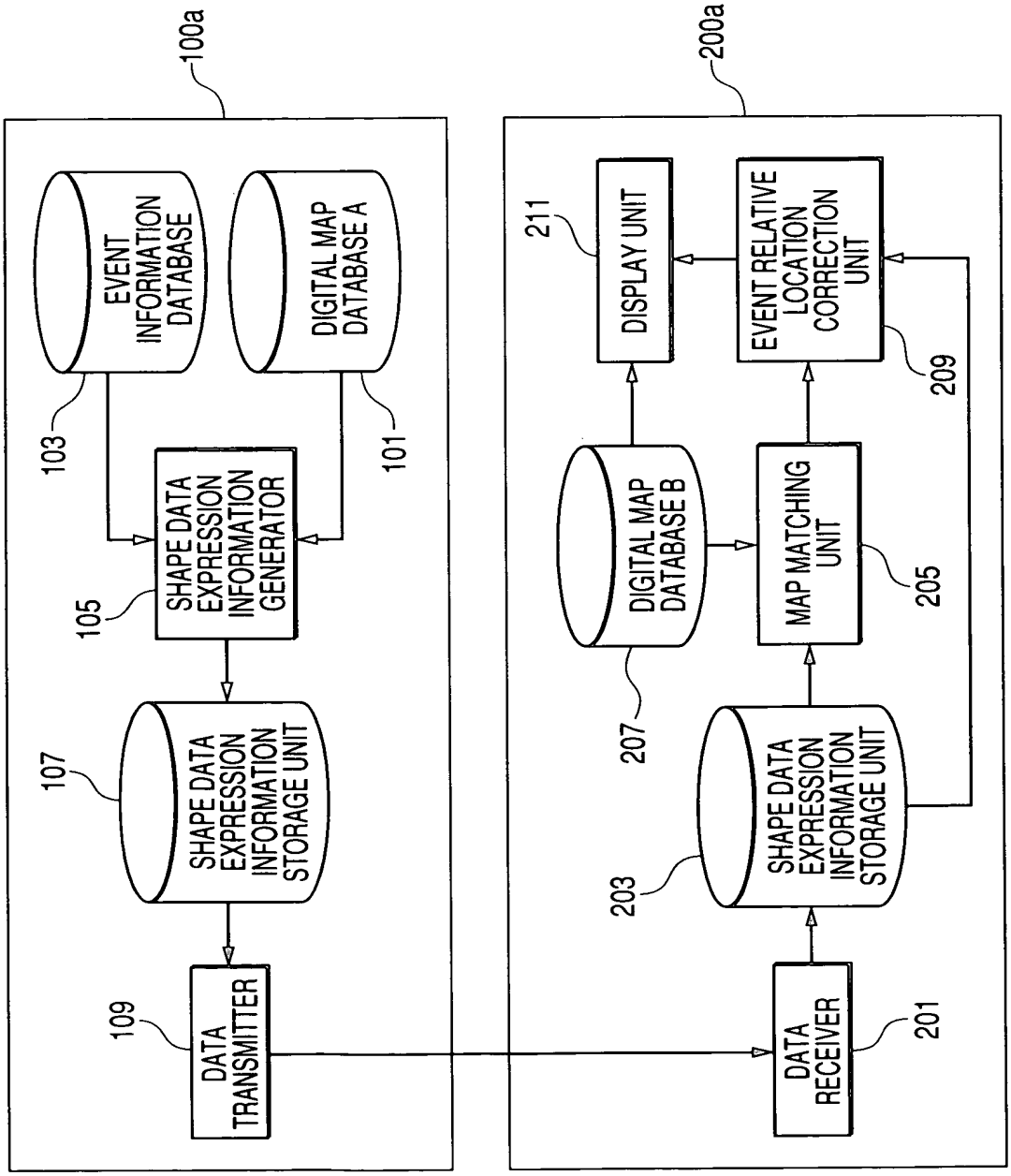

100a
200a
EVENT INFORMATION DATABASE
DIGITAL MAP DATABASE A
SHAPE DATA EXPRESSION INFORMATION GENERATOR
SHAPE DATA EXPRESSION INFORMATION STORAGE UNIT
DATA TRANSMITTER
DISPLAY UNIT
EVENT RELATIVE LOCATION CORRECTION UNIT
DIGITAL MAP DATABASE B
MAP MATCHING UNIT
SHAPE DATA EXPRESSION INFORMATION STORAGE UNIT
DATA RECEIVER
101
103
105
107
109
201
203
205
207
209
211

FIG. 2(a)

SHAPE DATA ARRAY

| SHAPE DATA ARRAY IDENTIFICATION NUMBER=1 |
|---|
| VECTOR DATA TYPE (=ROAD) |
| TOTAL LENGTH OF SHAPE DATA |
| TOTAL NUMBER OF NODES |
| NODE NUMBER p1 |
| ABSOLUTE X-DIRECTIONAL NODE 1 COORDINATE (LONGITUDE) |
| ABSOLUTE Y-DIRECTIONAL NODE 1 COORDINATE (LATITUDE) |
| ABSOLUTE BEARING OF NODE 1 |
| ⟆ |
| NODE NUMBER pN |
| ABSOLUTE X-DIRECTIONAL NODE N COORDINATE (xn) |
| ABSOLUTE Y-DIRECTIONAL NODE N COORDINATE (yn) |
| ABSOLUTE BEARING OF NODE N |
| ⟆ ⟆ |
| SHAPE DATA ARRAY IDENTIFICATION NUMBER=56 |
| ⟆ ⟆ |
| SHAPE DATA ARRAY IDENTIFICATION NUMBER=100 |
| ⟆ |

FIG. 2(b)

EVENT INFORMATION

| REFERENCE SHAPE DATA ARRAY NUMBER=56 |
|---|
| EVENT 1 (=VEHICLE TRAFFIC SUSPENSION EVENT) |
| DETAILED EVENT INFORMATION (E.G., VEHICLE TRAFFIC SUSPENSION) |
| RELATIVE LOCATION (=De) OF EVENT |
| DIRECTION IDENTIFICATION FLAG (=1) |
| ⟆ |
| EVENT n (TRAFFIC CONGESTION) |
| CONGESTION RANK |
| RELATIVE LOCATION 1 (=Dj1) OF EVENT (CONGESTION START SIDE) |
| RELATIVE LOCATION 1 (=Dj2) OF EVENT (CONGESTION END SIDE) |

FIG. 3

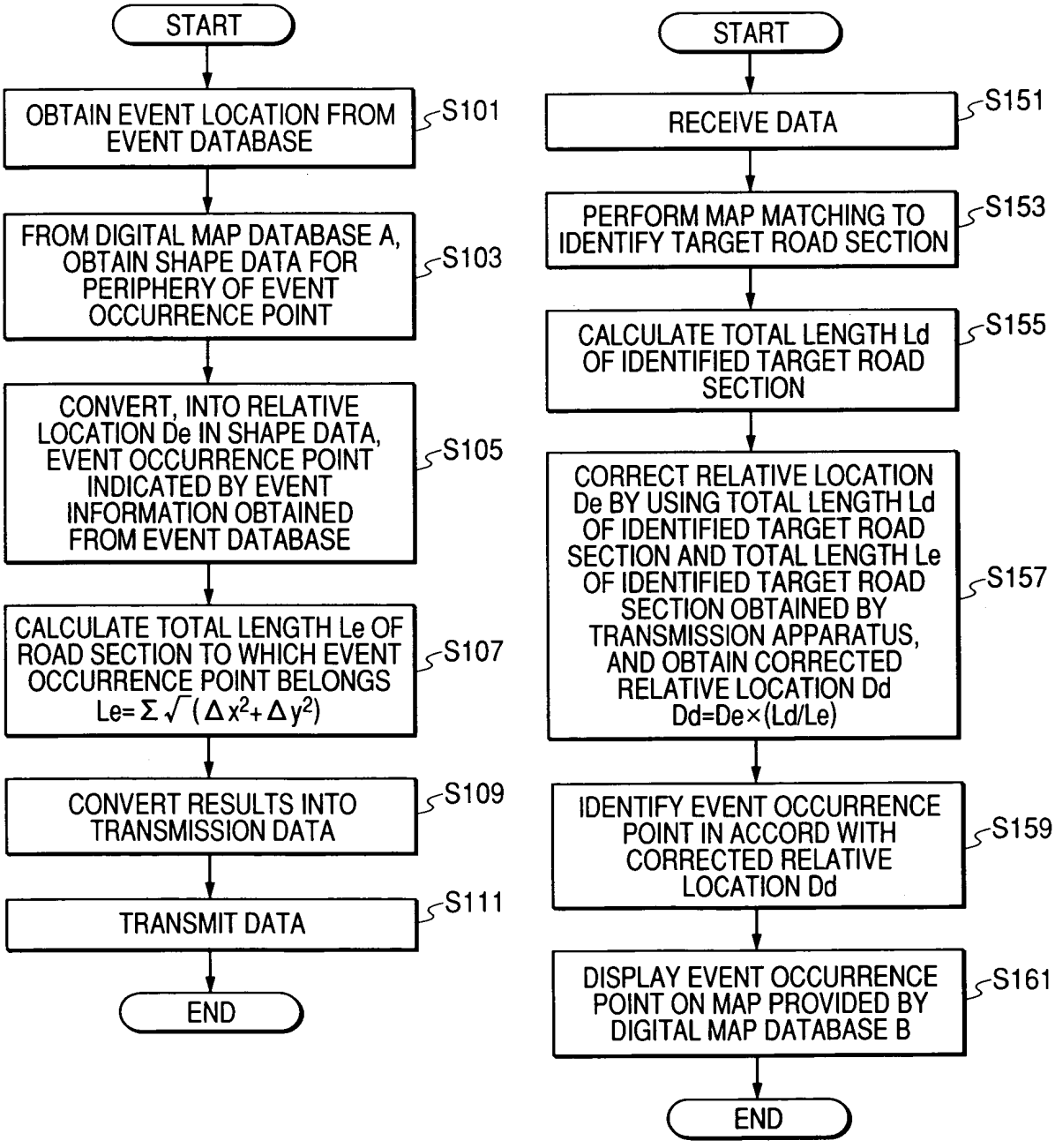

START
OBTAIN EVENT LOCATION FROM EVENT DATABASE
S101
FROM DIGITAL MAP DATABASE A, OBTAIN SHAPE DATA FOR PERIPHERY OF EVENT OCCURRENCE POINT
S103
CONVERT, INTO RELATIVE LOCATION De IN SHAPE DATA, EVENT OCCURRENCE POINT INDICATED BY EVENT INFORMATION OBTAINED FROM EVENT DATABASE
S105
CALCULATE TOTAL LENGTH Le OF ROAD SECTION TO WHICH EVENT OCCURRENCE POINT BELONGS
Le=Σ√(Δx²+Δy²)
S107
CONVERT RESULTS INTO TRANSMISSION DATA
S109
TRANSMIT DATA
S111
END
START
RECEIVE DATA
S151
PERFORM MAP MATCHING TO IDENTIFY TARGET ROAD SECTION
S153
CALCULATE TOTAL LENGTH Ld OF IDENTIFIED TARGET ROAD SECTION
S155
CORRECT RELATIVE LOCATION De BY USING TOTAL LENGTH Ld OF IDENTIFIED TARGET ROAD SECTION AND TOTAL LENGTH Le OF IDENTIFIED TARGET ROAD SECTION OBTAINED BY TRANSMISSION APPARATUS, AND OBTAIN CORRECTED RELATIVE LOCATION Dd
Dd=De×(Ld/Le)
S157
IDENTIFY EVENT OCCURRENCE POINT IN ACCORD WITH CORRECTED RELATIVE LOCATION Dd
S159
DISPLAY EVENT OCCURRENCE POINT ON MAP PROVIDED BY DIGITAL MAP DATABASE B
S161
END

FIG. 4

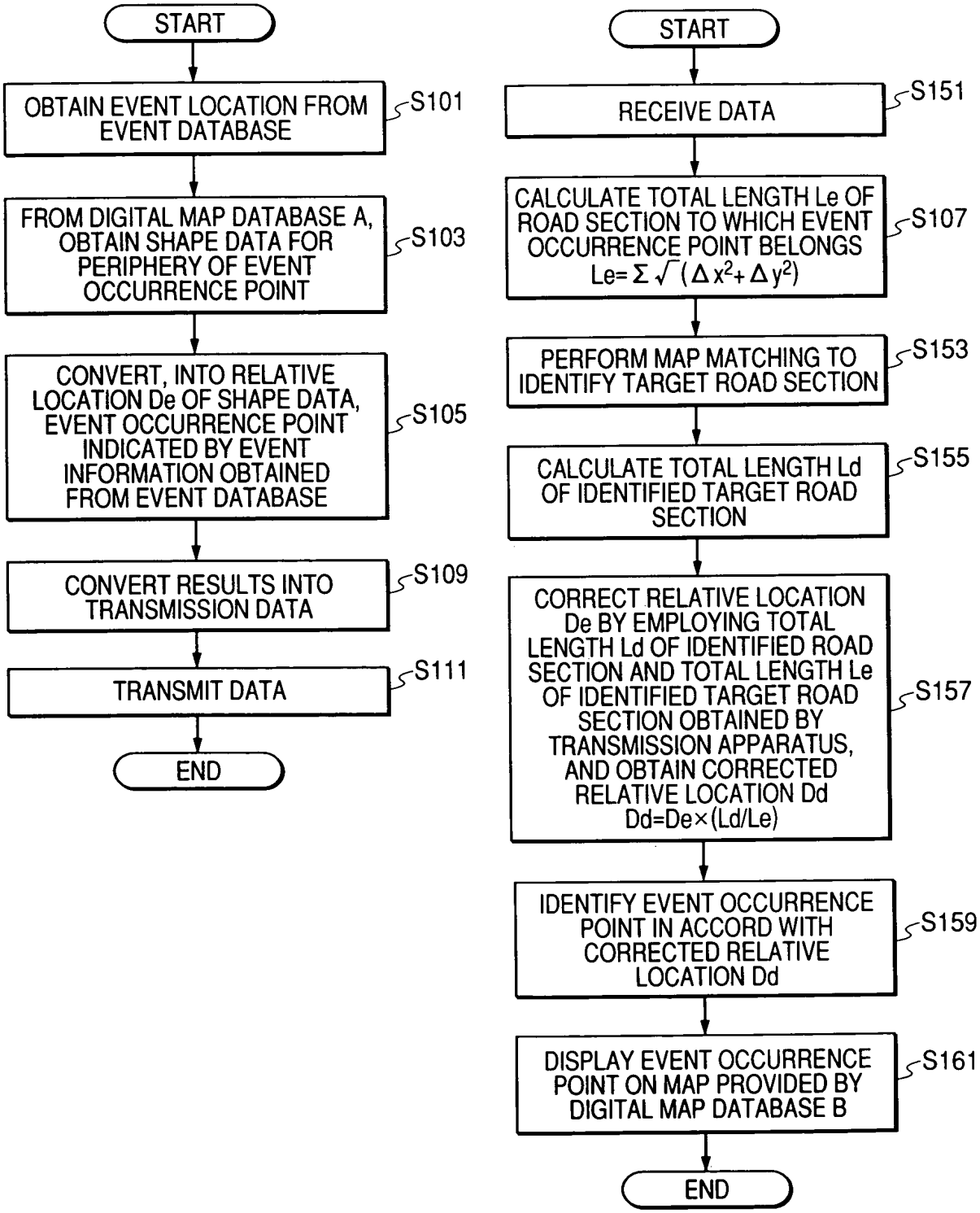

START
OBTAIN EVENT LOCATION FROM EVENT DATABASE
S101
FROM DIGITAL MAP DATABASE A, OBTAIN SHAPE DATA FOR PERIPHERY OF EVENT OCCURRENCE POINT
S103
CONVERT, INTO RELATIVE LOCATION De OF SHAPE DATA, EVENT OCCURRENCE POINT INDICATED BY EVENT INFORMATION OBTAINED FROM EVENT DATABASE
S105
CONVERT RESULTS INTO TRANSMISSION DATA
S109
TRANSMIT DATA
S111
END
START
RECEIVE DATA
S151
CALCULATE TOTAL LENGTH Le OF ROAD SECTION TO WHICH EVENT OCCURRENCE POINT BELONGS
Le= Σ √ (Δ x2+ Δ y2)
S107
PERFORM MAP MATCHING TO IDENTIFY TARGET ROAD SECTION
S153
CALCULATE TOTAL LENGTH Ld OF IDENTIFIED TARGET ROAD SECTION
S155
CORRECT RELATIVE LOCATION De BY EMPLOYING TOTAL LENGTH Ld OF IDENTIFIED ROAD SECTION AND TOTAL LENGTH Le OF IDENTIFIED TARGET ROAD SECTION OBTAINED BY TRANSMISSION APPARATUS, AND OBTAIN CORRECTED RELATIVE LOCATION Dd
Dd=De×(Ld/Le)
S157
IDENTIFY EVENT OCCURRENCE POINT IN ACCORD WITH CORRECTED RELATIVE LOCATION Dd
S159
DISPLAY EVENT OCCURRENCE POINT ON MAP PROVIDED BY DIGITAL MAP DATABASE B
S161
END

FIG. 5

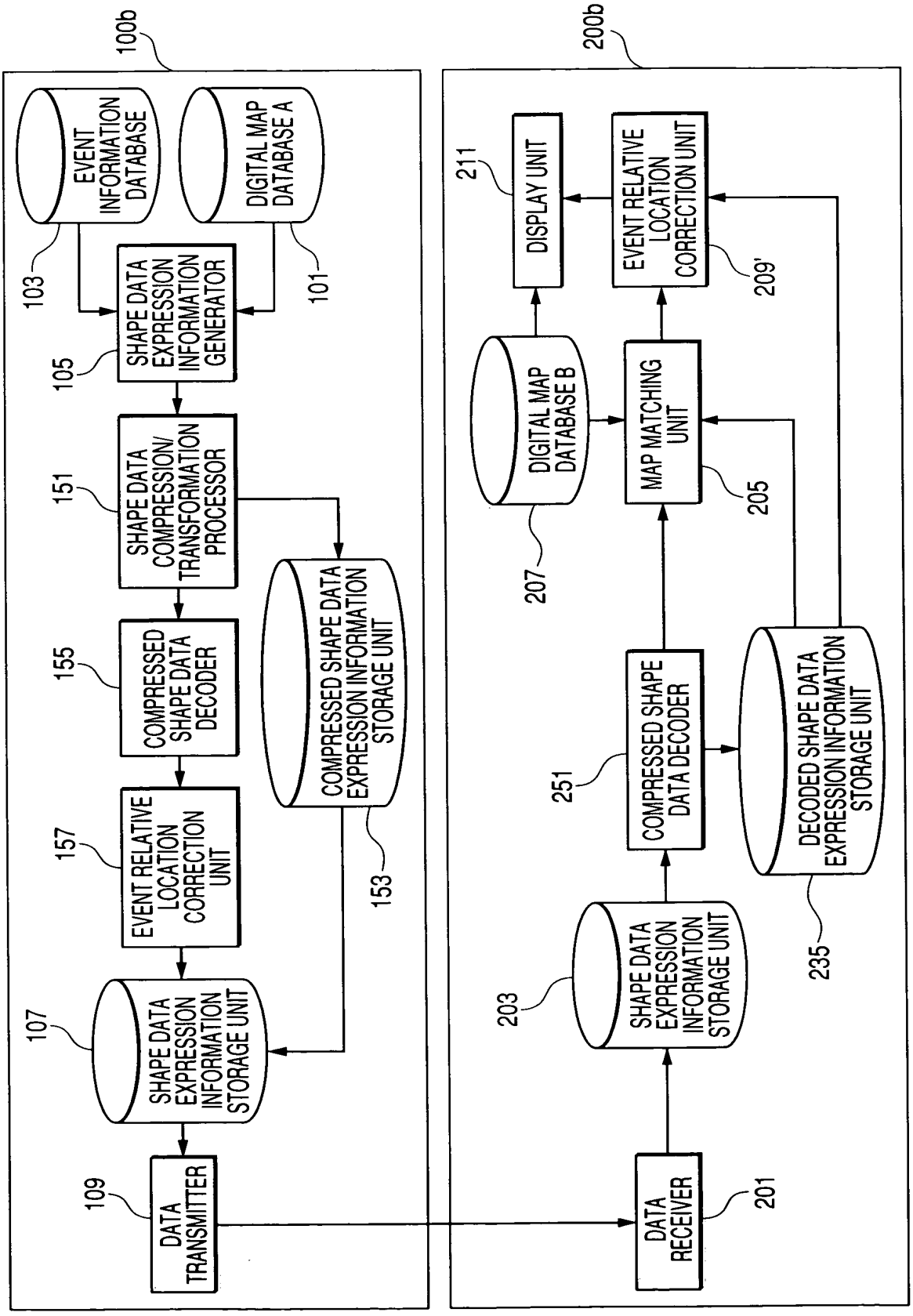

100b
EVENT INFORMATION DATABASE
DIGITAL MAP DATABASE A
103
101
105
SHAPE DATA EXPRESSION INFORMATION GENERATOR
151
SHAPE DATA COMPRESSION/ TRANSFORMATION PROCESSOR
155
COMPRESSED SHAPE DATA DECODER
157
EVENT RELATIVE LOCATION CORRECTION UNIT
153
COMPRESSED SHAPE DATA EXPRESSION INFORMATION STORAGE UNIT
107
SHAPE DATA EXPRESSION INFORMATION STORAGE UNIT
109
DATA TRANSMITTER
200b
211
DISPLAY UNIT
EVENT RELATIVE LOCATION CORRECTION UNIT
209'
207
DIGITAL MAP DATABASE B
MAP MATCHING UNIT
205
251
COMPRESSED SHAPE DATA DECODER
DECODED SHAPE DATA EXPRESSION INFORMATION STORAGE UNIT
235
203
SHAPE DATA EXPRESSION INFORMATION STORAGE UNIT
DATA RECEIVER
201

FIG. 6(a)

SHAPE DATA ARRAY

| SHAPE DATA ARRAY IDENTIFICATION NUMBER=1 |
|---|
| VECTOR DATA TYPE (=ROAD) |
| TOTAL NUMBER OF NODES (N) |
| ABSOLUTE X-DIRECTIONAL HEAD NODE 1 COORDINATE (LONGITUDE) |
| ABSOLUTE Y-DIRECTIONAL HEAD NODE 1 COORDINATE (LATITUDE) |
| ABSOLUTE BEARING OF HEAD NODE 1 |
| DISTANCE L FROM HEAD NODE 1 TO SUCCEEDING SHAPE NODE |
| COMPRESSED/TRANSFORMED DATA FOR SHAPE BETWEEN HEAD NODE TO TERMINAL NODE |
| ⟆ ⟆ |
| SHAPE DATA ARRAY IDENTIFICATION NUMBER=56 |
| ⟆ ⟆ |
| SHAPE DATA ARRAY IDENTIFICATION NUMBER=100 |
| ⟆ |

FIG. 6(b)

EVENT INFORMATION

| REFERENCE SHAPE DATA ARRAY NUMBER=56 |
|---|
| EVENT 1 (=VEHICLE TRAFFIC SUSPENSION EVENT) |
| DETAILED EVENT INFORMATION (E.G., VEHICLE TRAFFIC SUSPENSION) |
| RELATIVE LOCATION (=Da') OF EVENT |
| DIRECTION IDENTIFICATION FLAG (=1) |
| ⟆ |
| EVENT n (TRAFFIC CONGESTION) |
| CONGESTION RANK |
| RELATIVE LOCATION 1 (=Dj1') OF EVENT (CONGESTION START SIDE) |
| RELATIVE LOCATION 1 (=Dj2') OF EVENT (CONGESTION END SIDE) |

FIG. 7

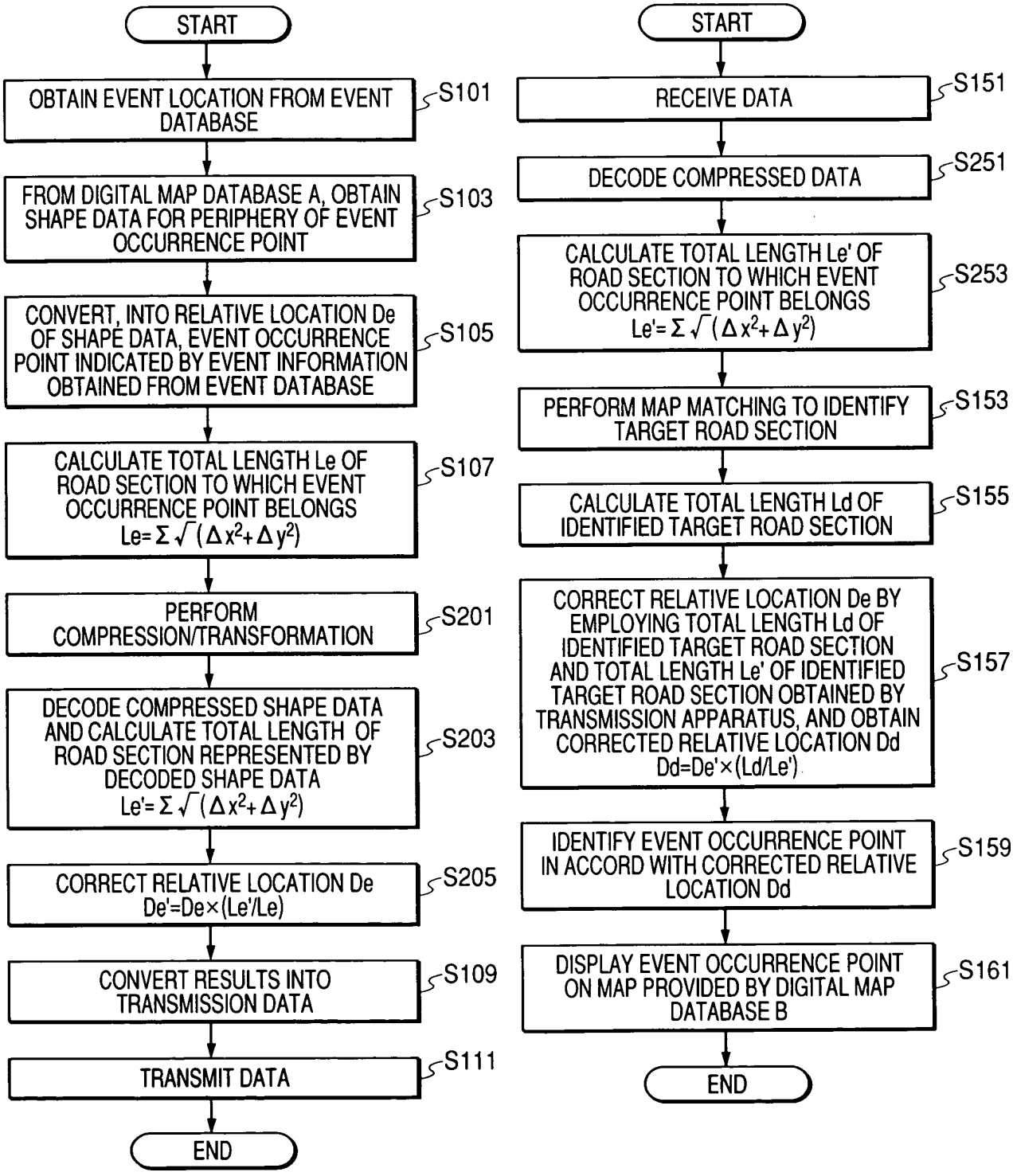

START
OBTAIN EVENT LOCATION FROM EVENT DATABASE
S101
FROM DIGITAL MAP DATABASE A, OBTAIN SHAPE DATA FOR PERIPHERY OF EVENT OCCURRENCE POINT
S103
CONVERT, INTO RELATIVE LOCATION De OF SHAPE DATA, EVENT OCCURRENCE POINT INDICATED BY EVENT INFORMATION OBTAINED FROM EVENT DATABASE
S105
CALCULATE TOTAL LENGTH Le OF ROAD SECTION TO WHICH EVENT OCCURRENCE POINT BELONGS
Le=Σ√(Δx²+Δy²)
S107
PERFORM COMPRESSION/TRANSFORMATION
S201
DECODE COMPRESSED SHAPE DATA AND CALCULATE TOTAL LENGTH OF ROAD SECTION REPRESENTED BY DECODED SHAPE DATA
Le'=Σ√(Δx²+Δy²)
S203
CORRECT RELATIVE LOCATION De
De'=De×(Le'/Le)
S205
CONVERT RESULTS INTO TRANSMISSION DATA
S109
TRANSMIT DATA
S111
END
START
RECEIVE DATA
S151
DECODE COMPRESSED DATA
S251
CALCULATE TOTAL LENGTH Le' OF ROAD SECTION TO WHICH EVENT OCCURRENCE POINT BELONGS
Le'=Σ√(Δx²+Δy²)
S253
PERFORM MAP MATCHING TO IDENTIFY TARGET ROAD SECTION
S153
CALCULATE TOTAL LENGTH Ld OF IDENTIFIED TARGET ROAD SECTION
S155
CORRECT RELATIVE LOCATION De BY EMPLOYING TOTAL LENGTH Ld OF IDENTIFIED TARGET ROAD SECTION AND TOTAL LENGTH Le' OF IDENTIFIED TARGET ROAD SECTION OBTAINED BY TRANSMISSION APPARATUS, AND OBTAIN CORRECTED RELATIVE LOCATION Dd
Dd=De'×(Ld/Le')
S157
IDENTIFY EVENT OCCURRENCE POINT IN ACCORD WITH CORRECTED RELATIVE LOCATION Dd
S159
DISPLAY EVENT OCCURRENCE POINT ON MAP PROVIDED BY DIGITAL MAP DATABASE B
S161
END

FIG. 8(a)

SHAPE DATA ARRAY

| SHAPE DATA ARRAY IDENTIFICATION NUMBER=1 |
|---|
| VECTOR DATA TYPE (=ROAD) |
| TOTAL NUMBER OF NODES (N) |
| ABSOLUTE X-DIRECTIONAL HEAD NODE 1 COORDINATE (LONGITUDE) |
| ABSOLUTE Y-DIRECTIONAL HEAD NODE 1 COORDINATE (LATITUDE) |
| ABSOLUTE BEARING OF HEAD NODE 1 |
| DISTANCE L FROM HEAD NODE 1 TO SUCCEEDING SHAPE NODE |
| TRANSFORMED/COMPRESSED DATA FOR SHAPE BETWEEN HEAD NODE AND TERMINAL NODE |
| ⟆ ⟆ |
| SHAPE DATA ARRAY IDENTIFICATION NUMBER=56 |
| ⟆ ⟆ |
| SHAPE DATA ARRAY IDENTIFICATION NUMBER=100 |
| ⟆ |

FIG. 8(b)

EVENT INFORMATION

| REFERENCE SHAPE DATA ARRAY NUMBER=56 | |
|---|---|
| EVENT 1 (=VEHICLE TRAFFIC SUSPENSION EVENT) | |
| DETAILED EVENT INFORMATION (E.G., VEHICLE TRAFFIC SUSPENSION) | |
| FEATURE NODE NUMBER 1 (Pm) | FEATURE NODE NUMBER 2 (Pn) |
| RELATIVE LOCATION (=De-1') OF EVENT FROM Pm | |
| DIRECTION IDENTIFICATION FLAG (=1) | |
| ⟆ | |
| EVENT n (TRAFFIC CONGESTION) | |
| CONGESTION RANK | |
| FEATURE NODE NUMBER 1 (Pm') | FEATURE NODE NUMBER 2 (Pn') |
| RELATIVE LOCATION 1 (=De-j1') OF EVENT FROM Pm' (CONGESTION START SIDE) | |
| RELATIVE LOCATION 1 (=De-j2') OF EVENT FROM Pm' (CONGESTION END SIDE) | |

FIG. 9

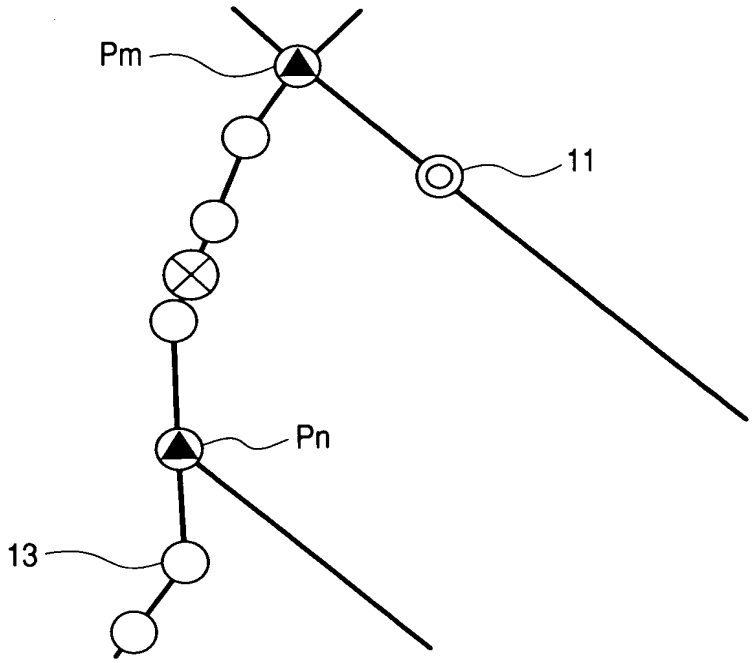


FIG. 10

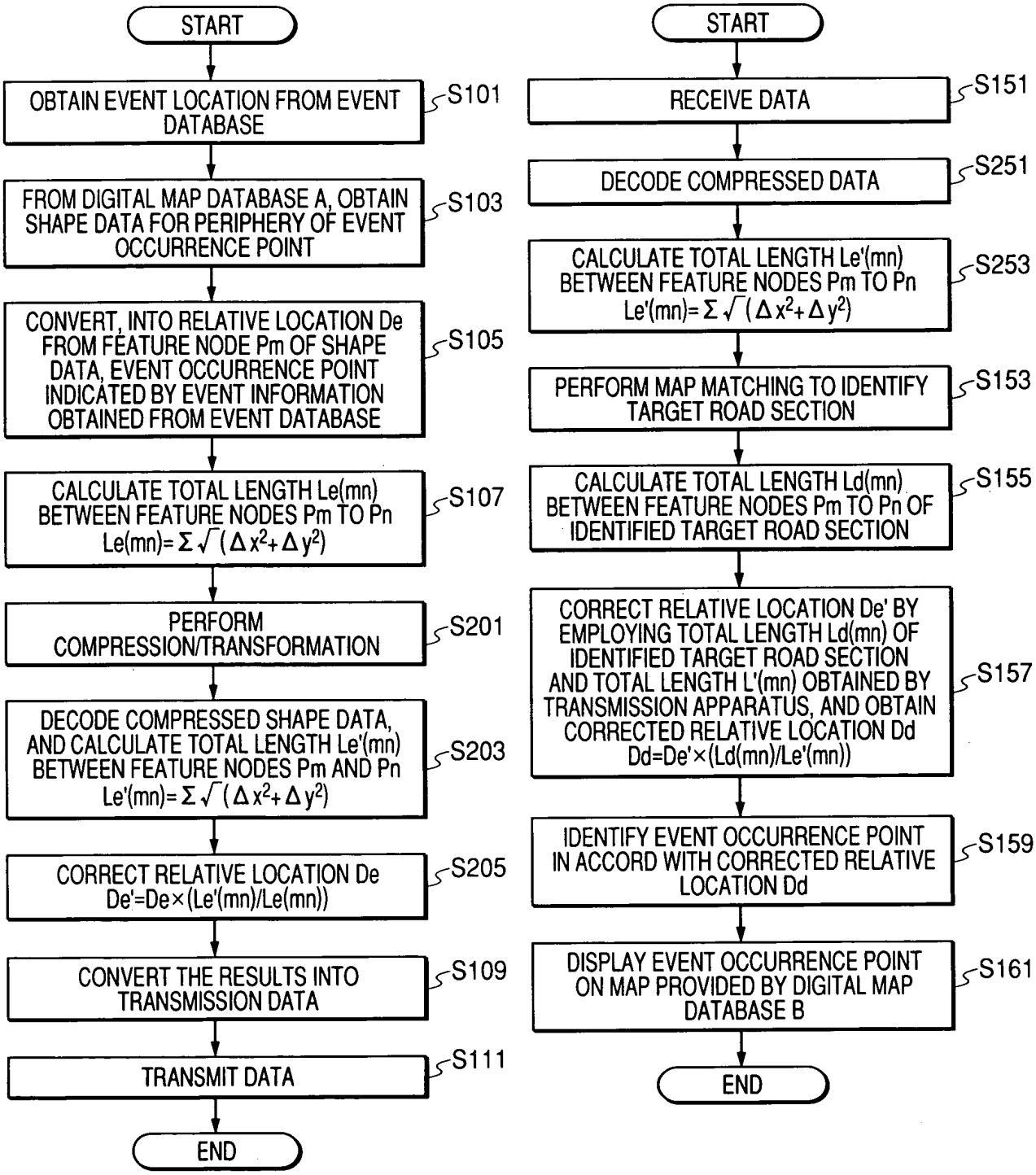

START
OBTAIN EVENT LOCATION FROM EVENT DATABASE
S101
FROM DIGITAL MAP DATABASE A, OBTAIN SHAPE DATA FOR PERIPHERY OF EVENT OCCURRENCE POINT
S103
CONVERT, INTO RELATIVE LOCATION De FROM FEATURE NODE Pm OF SHAPE DATA, EVENT OCCURRENCE POINT INDICATED BY EVENT INFORMATION OBTAINED FROM EVENT DATABASE
S105
CALCULATE TOTAL LENGTH Le(mn) BETWEEN FEATURE NODES Pm TO Pn
Le(mn)= Σ √ ( Δ x2+ Δ y2)
S107
PERFORM COMPRESSION/TRANSFORMATION
S201
DECODE COMPRESSED SHAPE DATA, AND CALCULATE TOTAL LENGTH Le'(mn) BETWEEN FEATURE NODES Pm AND Pn
Le'(mn)= Σ √ ( Δ x2+ Δ y2)
S203
CORRECT RELATIVE LOCATION De
De'=De×(Le'(mn)/Le(mn))
S205
CONVERT THE RESULTS INTO TRANSMISSION DATA
S109
TRANSMIT DATA
S111
END
START
RECEIVE DATA
S151
DECODE COMPRESSED DATA
S251
CALCULATE TOTAL LENGTH Le'(mn) BETWEEN FEATURE NODES Pm TO Pn
Le'(mn)= Σ √ ( Δ x2+ Δ y2)
S253
PERFORM MAP MATCHING TO IDENTIFY TARGET ROAD SECTION
S153
CALCULATE TOTAL LENGTH Ld(mn) BETWEEN FEATURE NODES Pm TO Pn OF IDENTIFIED TARGET ROAD SECTION
S155
CORRECT RELATIVE LOCATION De' BY EMPLOYING TOTAL LENGTH Ld(mn) OF IDENTIFIED TARGET ROAD SECTION AND TOTAL LENGTH L'(mn) OBTAINED BY TRANSMISSION APPARATUS, AND OBTAIN CORRECTED RELATIVE LOCATION Dd
Dd=De'×(Ld(mn)/Le'(mn))
S157
IDENTIFY EVENT OCCURRENCE POINT IN ACCORD WITH CORRECTED RELATIVE LOCATION Dd
S159
DISPLAY EVENT OCCURRENCE POINT ON MAP PROVIDED BY DIGITAL MAP DATABASE B
S161
END

FIG. 11

SHAPE DATA ATTRIBUTE INFORMATION

| SHAPE DATA IDENTIFICATION NUMBER (=56) |
|---|
| NODE NUMBER (=P1: HEAD) |
| NODE TYPE CODE |
| NODE NUMBER (=Pm') |
| NODE TYPE CODE |
| NODE NUMBER (=Pn') |
| NODE TYPE CODE |
| ⟆ |
| NODE NUMBER (=Pz': TERMINAL) |
| NODE TYPE CODE |
| ⟆ ⟆ |
| SHAPE DATA ARRAY IDENTIFICATION NUMBER (=999) |
| ⟆ ⟆ |

FIG. 12

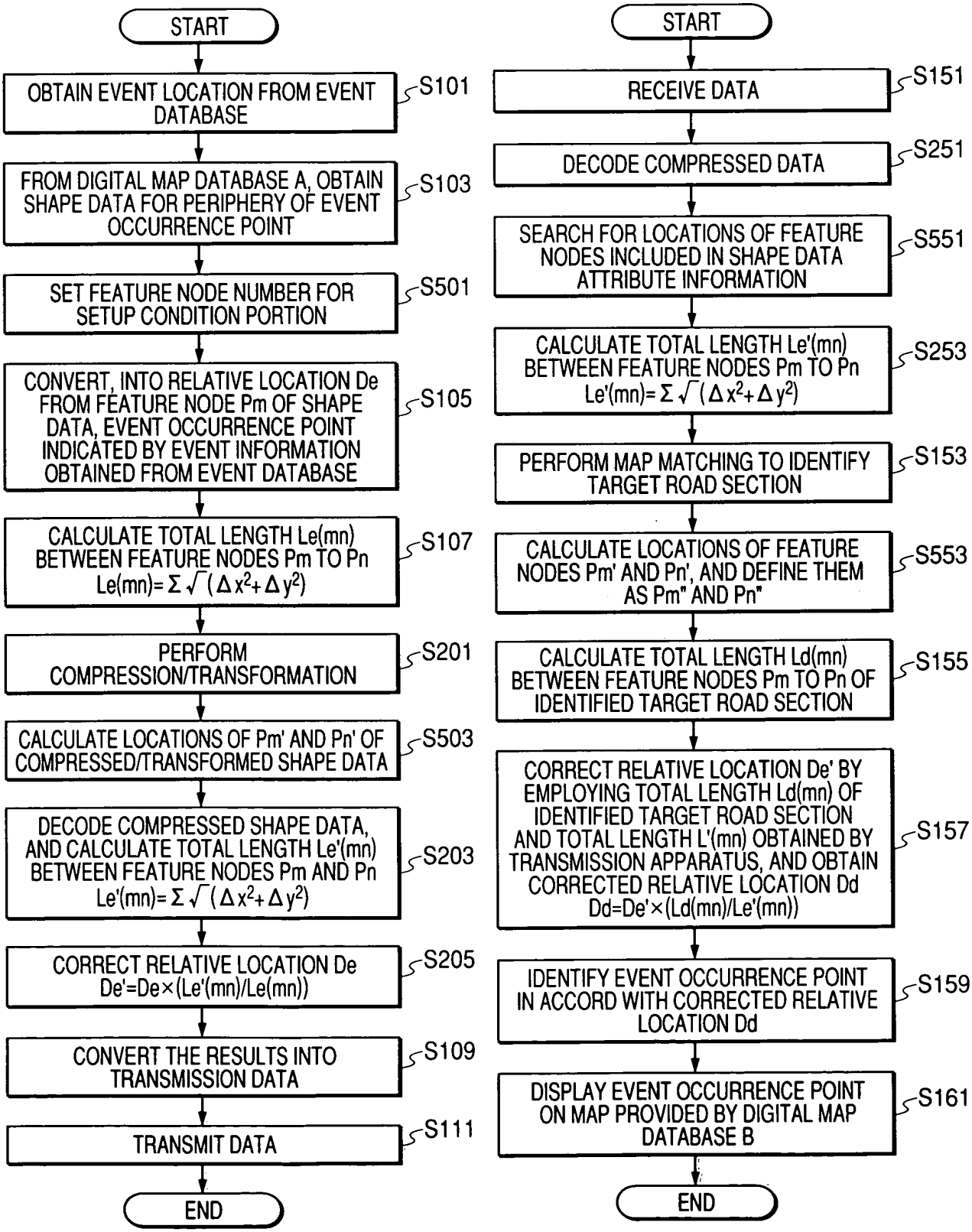

START
OBTAIN EVENT LOCATION FROM EVENT DATABASE
S101
FROM DIGITAL MAP DATABASE A, OBTAIN SHAPE DATA FOR PERIPHERY OF EVENT OCCURRENCE POINT
S103
SET FEATURE NODE NUMBER FOR SETUP CONDITION PORTION
S501
CONVERT, INTO RELATIVE LOCATION De FROM FEATURE NODE Pm OF SHAPE DATA, EVENT OCCURRENCE POINT INDICATED BY EVENT INFORMATION OBTAINED FROM EVENT DATABASE
S105
CALCULATE TOTAL LENGTH Le(mn) BETWEEN FEATURE NODES Pm TO Pn
Le(mn)= Σ √ (Δx2+ Δy2)
S107
PERFORM COMPRESSION/TRANSFORMATION
S201
CALCULATE LOCATIONS OF Pm' AND Pn' OF COMPRESSED/TRANSFORMED SHAPE DATA
S503
DECODE COMPRESSED SHAPE DATA, AND CALCULATE TOTAL LENGTH Le'(mn) BETWEEN FEATURE NODES Pm AND Pn
Le'(mn)= Σ √ (Δx2+ Δy2)
S203
CORRECT RELATIVE LOCATION De
De'=De×(Le'(mn)/Le(mn))
S205
CONVERT THE RESULTS INTO TRANSMISSION DATA
S109
TRANSMIT DATA
S111
END
START
RECEIVE DATA
S151
DECODE COMPRESSED DATA
S251
SEARCH FOR LOCATIONS OF FEATURE NODES INCLUDED IN SHAPE DATA ATTRIBUTE INFORMATION
S551
CALCULATE TOTAL LENGTH Le'(mn) BETWEEN FEATURE NODES Pm TO Pn
Le'(mn)= Σ √ (Δx2+ Δy2)
S253
PERFORM MAP MATCHING TO IDENTIFY TARGET ROAD SECTION
S153
CALCULATE LOCATIONS OF FEATURE NODES Pm' AND Pn', AND DEFINE THEM AS Pm" AND Pn"
S553
CALCULATE TOTAL LENGTH Ld(mn) BETWEEN FEATURE NODES Pm TO Pn OF IDENTIFIED TARGET ROAD SECTION
S155
CORRECT RELATIVE LOCATION De' BY EMPLOYING TOTAL LENGTH Ld(mn) OF IDENTIFIED TARGET ROAD SECTION AND TOTAL LENGTH L'(mn) OBTAINED BY TRANSMISSION APPARATUS, AND OBTAIN CORRECTED RELATIVE LOCATION Dd
Dd=De'×(Ld(mn)/Le'(mn))
S157
IDENTIFY EVENT OCCURRENCE POINT IN ACCORD WITH CORRECTED RELATIVE LOCATION Dd
S159
DISPLAY EVENT OCCURRENCE POINT ON MAP PROVIDED BY DIGITAL MAP DATABASE B
S161
END

FIG. 13(a)

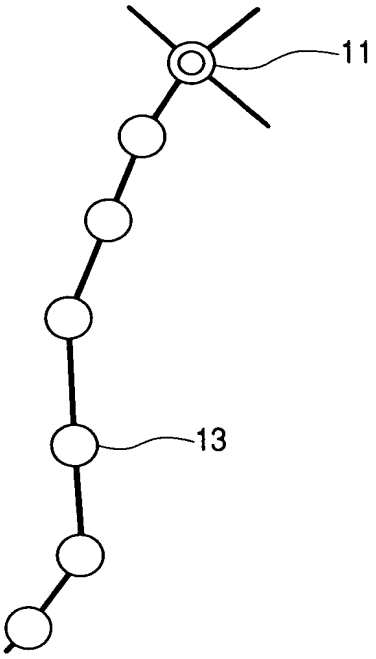



FIG. 13(b)

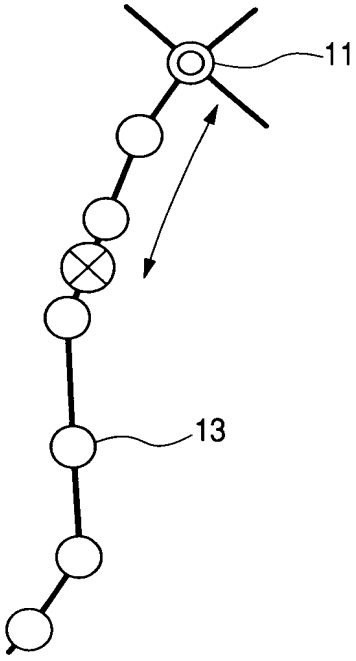


FIG. 14(a)

SHAPE DATA ARRAY

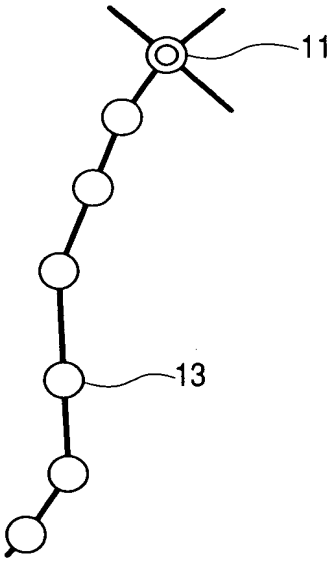
| SHAPE DATA ARRAY IDENTIFICATION NUMBER=1 |
|---|
| VECTOR DATA TYPE (=ROAD) |
| TOTAL NUMBER OF NODES |
| NODE NUMBER p1 |
| ABSOLUTE X-DIRECTIONAL NODE 1 COORDINATE (LONGITUDE) |
| ABSOLUTE Y-DIRECTIONAL NODE 1 COORDINATE (LATITUDE) |
| ABSOLUTE BEARING OF NODE 1 |
| ⟆ |
| NODE NUMBER pN |
| RELATIVE NODE N COORDINATE (xn) |
| RELATIVE NODE N COORDINATE (yn) |
| RELATIVE BEARING OF NODE N |
| ⟆ ⟆ |
| SHAPE DATA ARRAY IDENTIFICATION NUMBER=56 |
| ⟆ ⟆ |
| SHAPE DATA ARRAY IDENTIFICATION NUMBER=100 |
| ⟆ |

FIG. 14(b)

EVENT INFORMATION

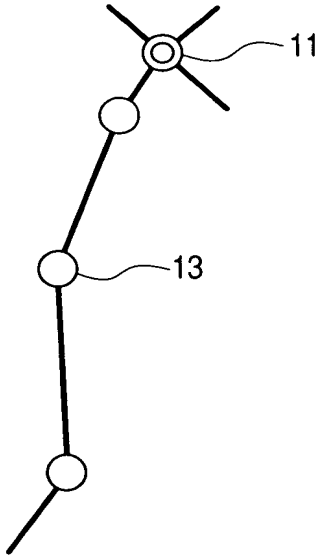
| REFERENCE SHAPE DATA ARRAY NUMBER=56 |
|---|
| EVENT 1 (=VEHICLE TRAFFIC SUSPENSION EVENT) |
| DETAILED EVENT INFORMATION (E.G., VEHICLE TRAFFIC SUSPENSION) |
| RELATIVE LOCATION (=Da) OF EVENT |
| DIRECTION IDENTIFICATION FLAG (=1) |
| ⟆ |
| EVENT n (TRAFFIC CONGESTION) |
| CONGESTION RANK |
| RELATIVE LOCATION 1 (=Dj1) OF EVENT (CONGESTION START SIDE) |
| RELATIVE LOCATION 1 (=Dj2) OF EVENT (CONGESTION END SIDE) |

FIG. 15(a)



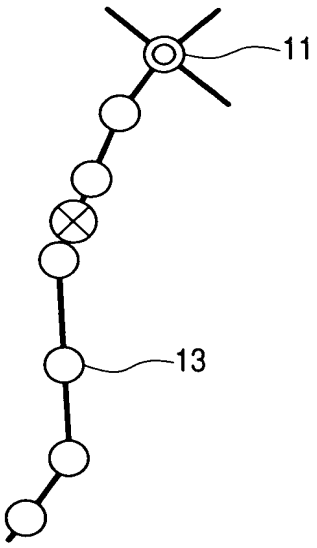

DIGITAL MAP DATABASE
PROVIDED BY COMPANY A

FIG. 15(b)



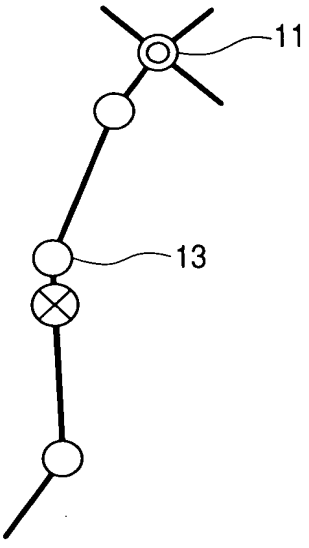

DIGITAL MAP DATABASE
PROVIDED BY COMPANY B

FIG. 16(a)




DIGITAL MAP DATABASE
PROVIDED BY COMPANY A

FIG. 16(b)




DIGITAL MAP DATABASE
PROVIDED BY COMPANY B

FIG. 17

| HEADER INFORMATION (INFORMATION TYPE/SECTION DEFINITION, ETC.) | |
|---|---|
| NODE COUNT N | |
| NODE NUMBER 1 | |
| NODE ATTRIBUTE INFORMATION FOR NODE 1 | |
| LONGITUDE OF NODE 1 | LATITUDE OF NODE 1 |
| NUMBER OF NODES CONNECTED TO NODE 1 | |
| CONNECTED NODE NUMBER #1 | LINK NUMBER #1-1 |
| ⌇ | |
| CONNECTED NODE NUMBER #m | LINK NUMBER #1-m |
| ⌇ ⌇ | |
| NODE NUMBER N | |
| NODE ATTRIBUTE INFORMATION FOR NODE N | |
| LONGITUDE OF NODE N | LATITUDE OF NODE N |
| NUMBER OF NODES CONNECTED TO NODE N | |
| CONNECTED NODE NUMBER #1 | LINK NUMBER #N-1 |
| ⌇ | |
| CONNECTED NODE NUMBER #m | LINK NUMBER #N-m |
| LINK COUNT L | |
| LINK NUMBER 1 | |
| LINK ATTRIBUTE INFORMATION FOR LINK 1 | |
| NUMBER OF INTERPOLATION POINTS FOR LINK 1 | |
| LONGITUDE OF INTERPOLATION POINT 1-1 | LATITUDE OF INTERPOLATION POINT 1-1 |
| ⌇ | |
| LONGITUDE OF INTERPOLATION POINT 1-p | LATITUDE OF INTERPOLATION POINT 1-p |
| ⌇ ⌇ | |
| LINK NUMBER L | |
| LINK ATTRIBUTE INFORMATION FOR LINK L | |
| NUMBER OF INTERPOLATION POINTS FOR LINK L | |
| LONGITUDE OF INTERPOLATION POINT L-1 | LATITUDE OF INTERPOLATION POINT L-1 |
| ⌇ | |
| LONGITUDE OF INTERPOLATION POINT L-p | LATITUDE OF INTERPOLATION POINT L-p |

FIG. 18

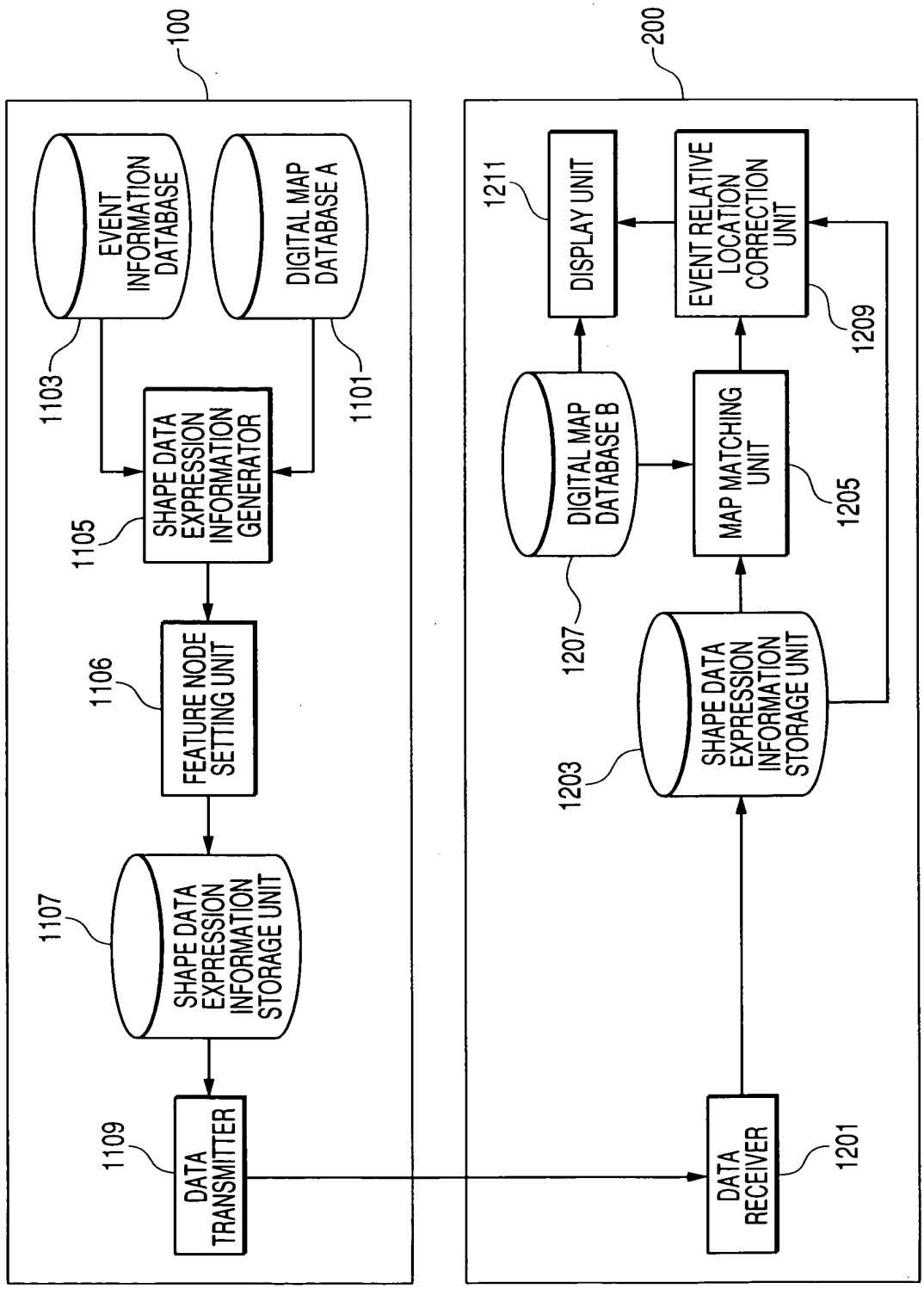

100
200
EVENT INFORMATION DATABASE
DIGITAL MAP DATABASE A
1103
1101
SHAPE DATA EXPRESSION INFORMATION GENERATOR
1105
FEATURE NODE SETTING UNIT
1106
SHAPE DATA EXPRESSION INFORMATION STORAGE UNIT
1107
DATA TRANSMITTER
1109
DISPLAY UNIT
1211
EVENT RELATIVE LOCATION CORRECTION UNIT
1209
DIGITAL MAP DATABASE B
1207
MAP MATCHING UNIT
1205
SHAPE DATA EXPRESSION INFORMATION STORAGE UNIT
1203
DATA RECEIVER
1201

FIG. 19(a)

SHAPE DATA ARRAY

| SHAPE DATA ARRAY IDENTIFICATION NUMBER=1 |
|---|
| VECTOR DATA TYPE (=ROAD) |
| TOTAL NUMBER OF NODES |
| NODE NUMBER p1 |
| ABSOLUTE X-DIRECTIONAL NODE 1 COORDINATE (LONGITUDE) |
| ABSOLUTE Y-DIRECTIONAL NODE 1 COORDINATE (LATITUDE) |
| ABSOLUTE BEARING OF NODE 1 |
| ⟆ |
| NODE NUMBER pN |
| RELATIVE NODE N COORDINATE (xn) |
| RELATIVE NODE N COORDINATE (yn) |
| RELATIVE BEARING OF NODE N |
| ⟆ ⟆ |
| SHAPE DATA ARRAY IDENTIFICATION NUMBER=56 |
| ⟆ ⟆ |
| SHAPE DATA ARRAY IDENTIFICATION NUMBER=100 |
| ⟆ |

FIG. 19(b)

EVENT INFORMATION

| REFERENCE SHAPE DATA ARRAY NUMBER (=56) | |
|---|---|
| EVENT 1 (=VEHICLE TRAFFIC SUSPENSION EVENT) | |
| DETAILED EVENT INFORMATION (E.G., VEHICLE TRAFFIC SUSPENSION) | |
| NODE NUMBER 1 (Pm') | NODE NUMBER 2 (Pn') |
| RELATIVE LOCATION OF EVENT FROM Pm' | |
| DIRECTION IDENTIFICATION FLAG (=1) | |
| ⟆ | |
| EVENT n (TRAFFIC CONGESTION) | |
| CONGESTION RANK | |
| NODE NUMBER 1 (Pm') | NODE NUMBER 2 (Pn') |
| RELATIVE LOCATION 1 OF EVENT FROM Pm' (CONGESTION START SIDE) | |
| RELATIVE LOCATION 1 OF EVENT FROM Pm' (CONGESTION END SIDE) | |

FIG. 19(c)

FEATURE NODE INFORMATION

| SHAPE DATA IDENTIFICATION NUMBER (=1) |
|---|
| NODE NUMBER Pm OF FEATURE NODE #1 |
| NODE NUMBER Pn OF FEATURE NODE #2 |
| DISTANCE BETWEEN FEATURE NODES #1 AND #2 |
| ⟆ |
| SHAPE DATA IDENTIFICATION NUMBER (=Z) |
| NODE NUMBER Pm' OF FEATURE NODE #p |
| NODE NUMBER Pn' OF FEATURE NODE #q |
| DISTANCE BETWEEN FEATURE NODES #p AND #q |

FIG. 20(a)

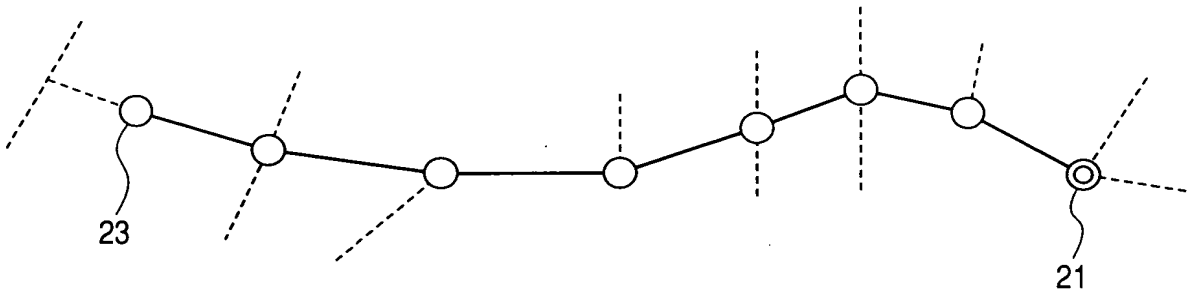



FIG. 20(b)

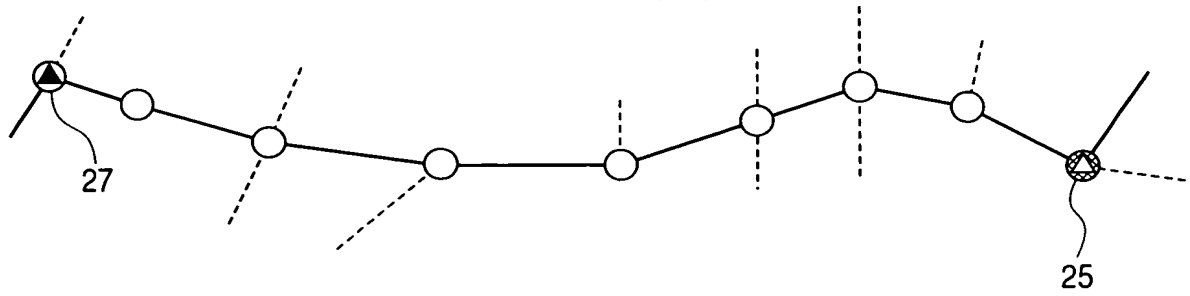



FIG. 20(c)

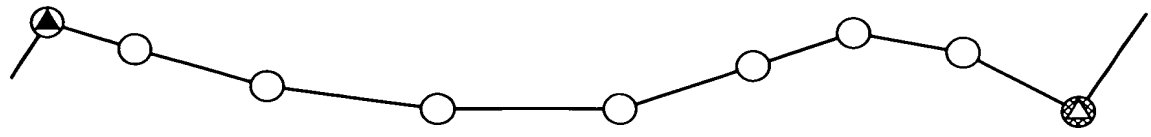


FIG. 21(a)

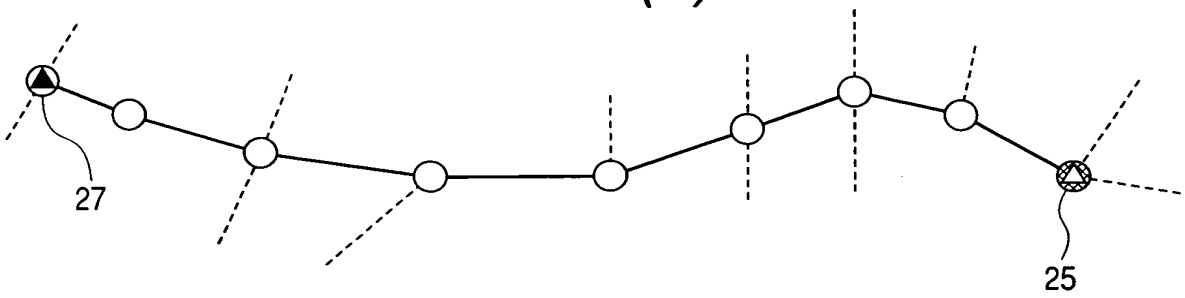



FIG. 21(b)

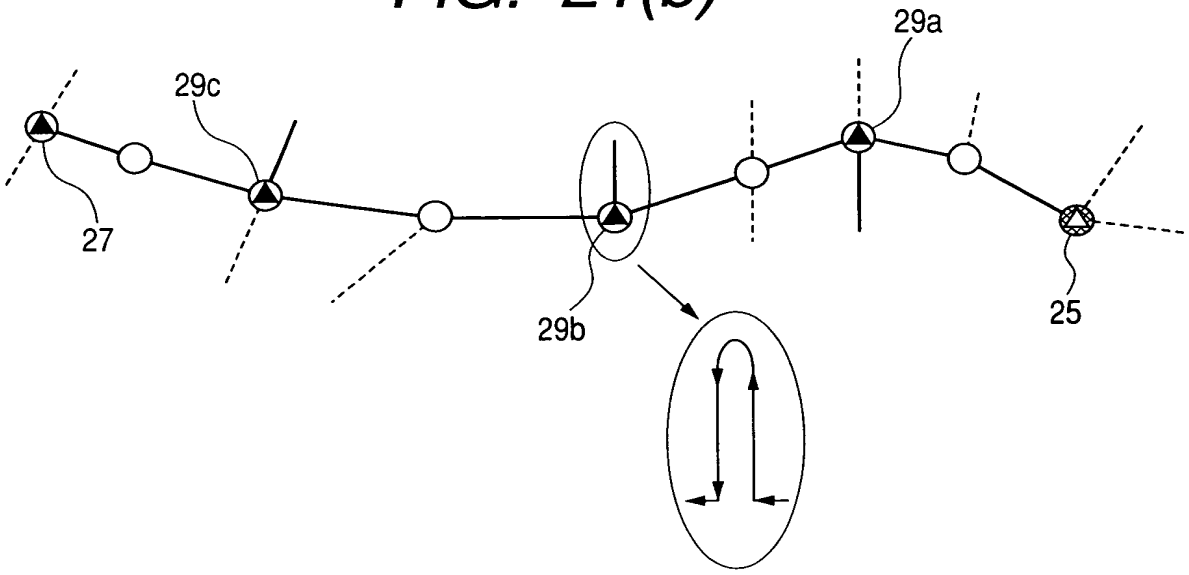



FIG. 21(c)

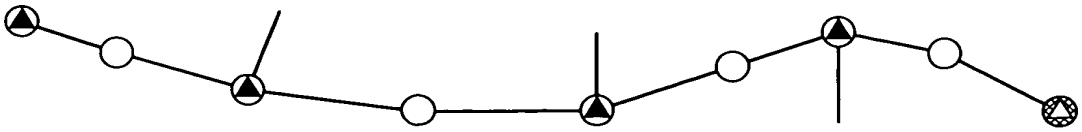


FIG. 22

EVENT INFORMATION

| | |
|---|---|
| REFERENCE SHAPE DATA ARRAY NUMBER (=56) | |
| EVENT 1 (=VEHICLE TRAFFIC SUSPENSION EVENT) | |
| DETAILED EVENT INFORMATION (E.G., VEHICLE TRAFFIC SUSPENSION) | |
| NODE NUMBER 1 (Pm') | NODE NUMBER 2 (Pn') |
| RELATIVE LOCATION OF EVENT FROM Pm' | |
| DIRECTION IDENTIFICATION FLAG (=1) | |
| ⌇ | |
| EVENT n (TRAFFIC CONGESTION) | |
| CONGESTION RANK | |
| NODE NUMBER 1 (Pm') | NODE NUMBER 2 (Pn') |
| RELATIVE LOCATION 1 OF EVENT FROM FEATURE NODE Pm' (CONGESTION START SIDE) | |
| RELATIVE LOCATION 1 OF EVENT FROM FEATURE NODE Pm' (CONGESTION END SIDE) | |

FIG. 23

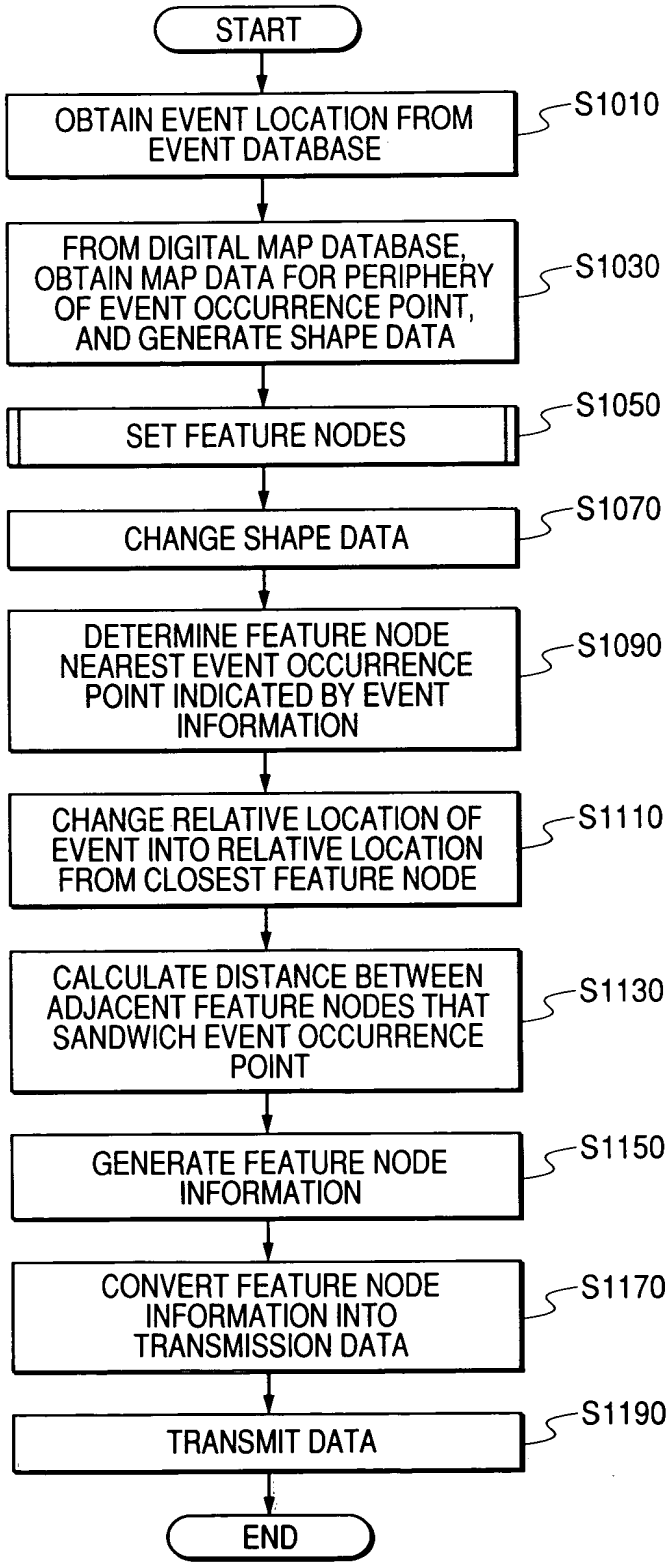

START
OBTAIN EVENT LOCATION FROM EVENT DATABASE
S1010
FROM DIGITAL MAP DATABASE, OBTAIN MAP DATA FOR PERIPHERY OF EVENT OCCURRENCE POINT, AND GENERATE SHAPE DATA
S1030
SET FEATURE NODES
S1050
CHANGE SHAPE DATA
S1070
DETERMINE FEATURE NODE NEAREST EVENT OCCURRENCE POINT INDICATED BY EVENT INFORMATION
S1090
CHANGE RELATIVE LOCATION OF EVENT INTO RELATIVE LOCATION FROM CLOSEST FEATURE NODE
S1110
CALCULATE DISTANCE BETWEEN ADJACENT FEATURE NODES THAT SANDWICH EVENT OCCURRENCE POINT
S1130
GENERATE FEATURE NODE INFORMATION
S1150
CONVERT FEATURE NODE INFORMATION INTO TRANSMISSION DATA
S1170
TRANSMIT DATA
S1190
END

FIG. 24

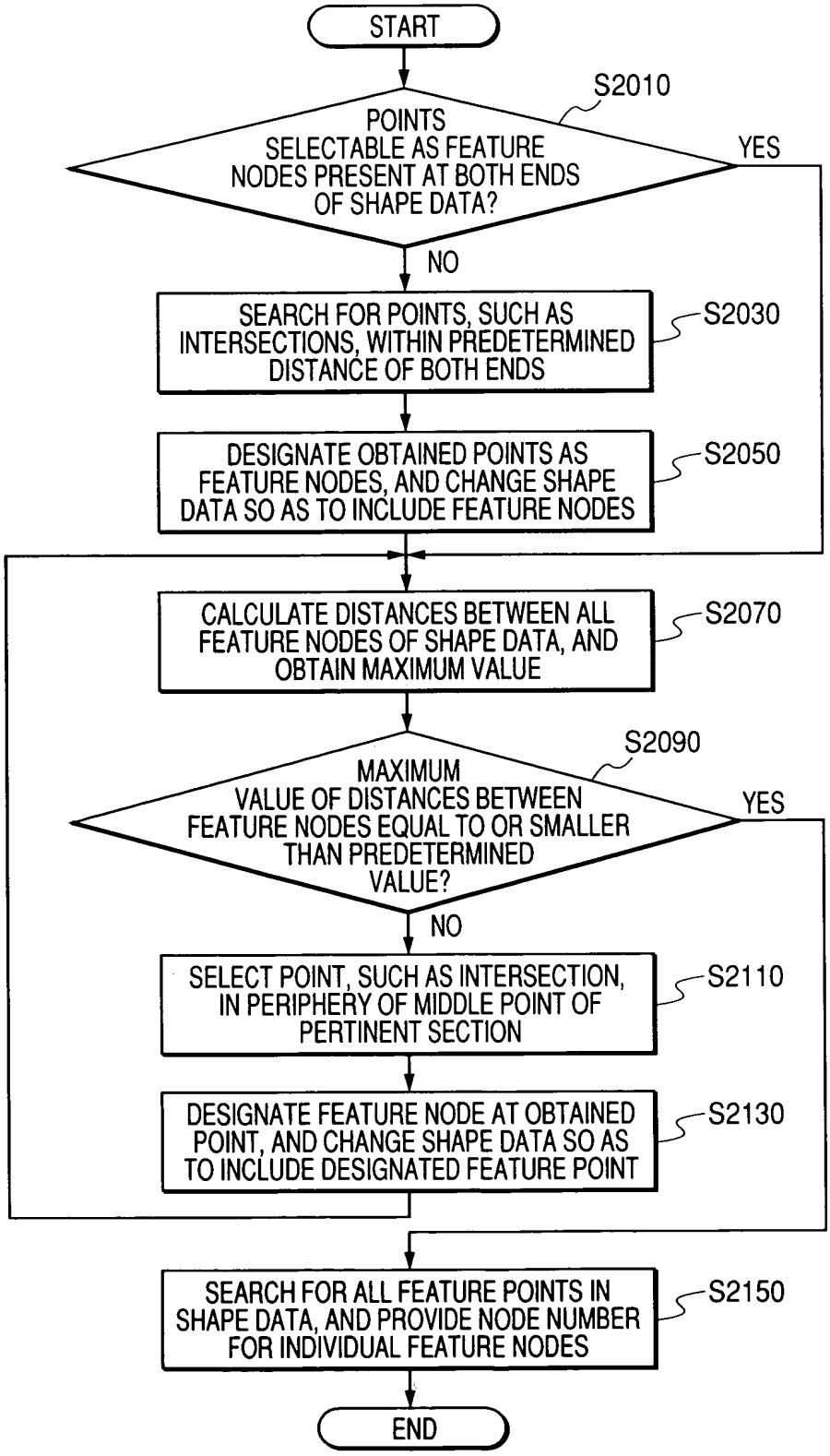

START
S2010
POINTS SELECTABLE AS FEATURE NODES PRESENT AT BOTH ENDS OF SHAPE DATA?
YES
NO
SEARCH FOR POINTS, SUCH AS INTERSECTIONS, WITHIN PREDETERMINED DISTANCE OF BOTH ENDS
S2030
DESIGNATE OBTAINED POINTS AS FEATURE NODES, AND CHANGE SHAPE DATA SO AS TO INCLUDE FEATURE NODES
S2050
CALCULATE DISTANCES BETWEEN ALL FEATURE NODES OF SHAPE DATA, AND OBTAIN MAXIMUM VALUE
S2070
S2090
MAXIMUM VALUE OF DISTANCES BETWEEN FEATURE NODES EQUAL TO OR SMALLER THAN PREDETERMINED VALUE?
YES
NO
SELECT POINT, SUCH AS INTERSECTION, IN PERIPHERY OF MIDDLE POINT OF PERTINENT SECTION
S2110
DESIGNATE FEATURE NODE AT OBTAINED POINT, AND CHANGE SHAPE DATA SO AS TO INCLUDE DESIGNATED FEATURE POINT
S2130
SEARCH FOR ALL FEATURE POINTS IN SHAPE DATA, AND PROVIDE NODE NUMBER FOR INDIVIDUAL FEATURE NODES
S2150
END

FIG. 25

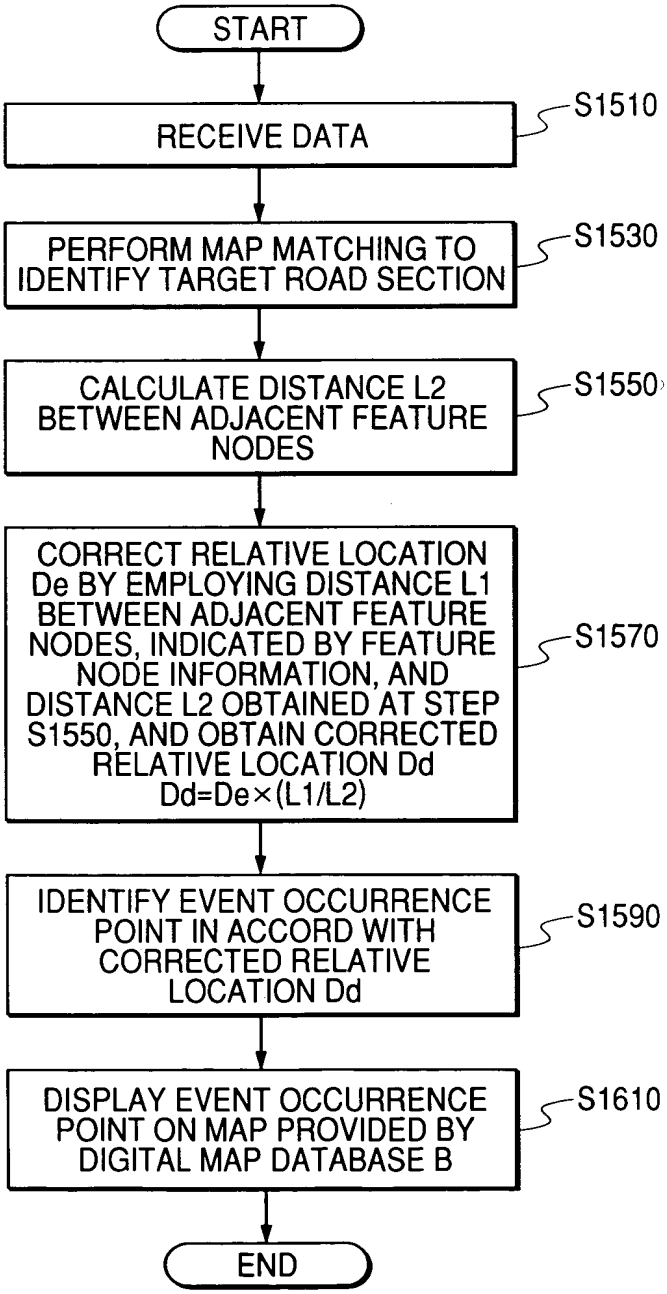

START
RECEIVE DATA
S1510
PERFORM MAP MATCHING TO IDENTIFY TARGET ROAD SECTION
S1530
CALCULATE DISTANCE L2 BETWEEN ADJACENT FEATURE NODES
S1550
CORRECT RELATIVE LOCATION De BY EMPLOYING DISTANCE L1 BETWEEN ADJACENT FEATURE NODES, INDICATED BY FEATURE NODE INFORMATION, AND DISTANCE L2 OBTAINED AT STEP S1550, AND OBTAIN CORRECTED RELATIVE LOCATION Dd
Dd=De×(L1/L2)
S1570
IDENTIFY EVENT OCCURRENCE POINT IN ACCORD WITH CORRECTED RELATIVE LOCATION Dd
S1590
DISPLAY EVENT OCCURRENCE POINT ON MAP PROVIDED BY DIGITAL MAP DATABASE B
S1610
END

FIG. 26(a)

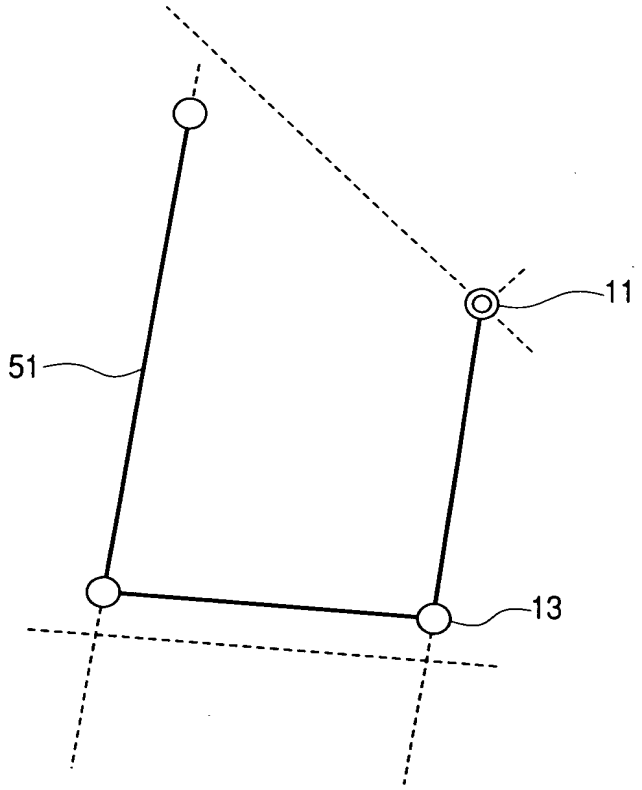



FIG. 26(b)